

Amendments to the Claims

The following listing of claims replaces all prior versions of the claims and all prior listings of the claims in the present application.

1-11. (Canceled)

12. (Currently Amended) A system for sensing at least one characteristic parameter of a tyre fitted to a vehicle, comprising:

a movable unit; and

a fixed unit;

wherein the movable unit is combined with the tyre,

wherein the movable unit comprises:

a device for sensing the at least one characteristic parameter;

a device for transmitting a signal out of the tyre; and

a device for generating electrical energy;

wherein the signal relates to the at least one characteristic parameter,

wherein the fixed unit is combined with the vehicle,

wherein the fixed unit comprises a device for receiving signals from the movable unit,

wherein the electrical energy generating device is capable of supplying electrical energy to the sensing device,

wherein the electrical energy generating device is capable of supplying electrical energy to the transmitting device, [[and]]

wherein the electrical energy generating device comprises a capacitor ~~that~~
~~charges itself~~ , the capacitor being charged with electrical energy in response to
mechanical stresses applied to the tyre, and

wherein the capacitor comprises two plates moving with respect to each other in
response to the mechanical stresses.

13. (Previously Presented) The system of claim 12, wherein the capacitor
comprises:

a fixed plate; and

a movable plate;

wherein the fixed plate and the movable plate move with respect to each other in
response to the mechanical stresses.

14. (Previously Presented) The system of claim 13, wherein a distance between
the fixed plate and the movable plate can vary in response to the mechanical stresses.

15. (Previously Presented) The system of claim 13, wherein the fixed plate and
the movable plate are connected to each other by a pair of springs.

16. (Previously Presented) The system of claim 13, wherein the fixed plate is
connected to a fixed support, and

wherein the movable plate is connected to a movable support.

17. (Previously Presented) The system of claim 13, wherein movement of the movable plate is bounded by a pair of end-stop elements.

18. (Previously Presented) The system of claim 12, wherein the sensing device, the transmitting device, and the generating device are produced on a substrate.

19. (Previously Presented) The system of claim 18, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

20. (Previously Presented) The system of claim 18, wherein a processing unit is also produced on the substrate.

21. (Previously Presented) The system of claim 20, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

22. (Previously Presented) The system of claim 18, wherein a memory device is also produced on the substrate.

23. (Previously Presented) The system of claim 22, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

24. (Previously Presented) The system of claim 18, wherein an electrical energy distributing device is also produced on the substrate.

25. (Previously Presented) The system of claim 24, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

26. (Previously Presented) The system of claim 18, wherein a processing unit and a memory device are also produced on the substrate.

27. (Previously Presented) The system of claim 26, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

28. (Previously Presented) The system of claim 18, wherein a processing unit, a memory device, and an electrical energy distributing device are also produced on the substrate.

29. (Previously Presented) The system of claim 28, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

30. (Currently Amended) A movable unit for sensing at least one characteristic parameter of a tyre fitted to a vehicle, comprising:

a device for sensing the at least one characteristic parameter;

a device for transmitting a signal out of the tyre; and

a device for generating electrical energy;

wherein the signal relates to the at least one characteristic parameter,

wherein the electrical energy generating device is capable of supplying electrical energy to the sensing device,

wherein the electrical energy generating device is capable of supplying electrical energy to the transmitting device, [[and]]

wherein the electrical energy generating device comprises a capacitor ~~that charges itself~~, the capacitor being charged with electrical energy in response to mechanical stresses applied to the tyre, and

wherein the capacitor comprises two plates moving with respect to each other in response to the mechanical stresses.

31. (Currently Amended) A vehicle wheel, comprising:

a tyre;

a supporting rim for the tyre; and

a movable unit combined with the tyre;

wherein the movable unit comprises:

a device for sensing at least one characteristic parameter of the tyre;

a device for transmitting a signal out of the tyre; and

a device for generating electrical energy;

wherein the signal relates to the at least one characteristic parameter,

wherein the electrical energy generating device is capable of supplying electrical energy to the sensing device,

wherein the electrical energy generating device is capable of supplying electrical energy to the transmitting device, [[and]]

wherein the electrical energy generating device comprises a capacitor ~~that~~
~~charges itself~~, the capacitor being charged with electrical energy in response to
mechanical stresses applied to the tyre, and

wherein the capacitor comprises two plates moving with respect to each other in
response to the mechanical stresses.